IN THE CLAIMS

1. (Original) A digital data modulator, comprising:

a source of a digital data signal;

an encoder, for encoding the digital data using a variable pulse width code;

a pulse signal generator, generating respective pulses representing edges of the encoded digital data signal; and

a carrier signal generator, for generating a carrier signal having carrier pulses corresponding to the respective pulses.

2. (Currently Amended) The modulator of claim 1 wherein the variable pulse width ~~codes~~ code is a variable aperture code.

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3. (Original) The modulator of claim 1 wherein:

the encoder generates an encoded digital data signal having leading edges and trailing edges;

the pulse signal generator generates positive pulses in response to a first edge the digital data signal and negative pulses in response to a different second edge in the digital data signal; and

the carrier signal generator generates a carrier pulse having a first phase in response to a positive pulse and having a second phase in response to a negative pulse.

4. (Original) The modulator of claim 3 wherein the first phase is substantially 180 degrees out of phase with the second phase;

said first edge is a leading edge; and

said second edge is a trailing edge.

5. (Previously amended) A digital data modulator, comprising:

a source of a digital data signal;

an encoder, for encoding the digital data using a variable pulse width code;

a pulse signal generator, gentling respective, pulses representing edges of the

encoded digital data signal; and

a carrier signal generator, for generating a carrier signal having carrier pulses corresponding to the respective pulses;

wherein the pulse signal generator comprises:

a differentiator, coupled to the encoder; and

a level detector, coupled to the differentiator.

6. (Previously amended) A digital data modulator, comprising:

a source of a digital data signal;

an encoder, for encoding the digital data using a variable pulse width code;

a pulse signal generator, gentling respective, pulses representing edges of the encoded digital data signal; and

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a carrier signal generator, for generating a carrier signal having carrier pulses corresponding to the respective pulses;

wherein the carrier signal generator comprises:

a carrier oscillator; and

a mixer, having a first input terminal coupled to the pulse signal generator and a second input terminal coupled to the carrier oscillator.

7. (Original) The modulator of claim 6 further comprising a bandpass filter coupled to an output terminal of the mixer.

8. (Original) A digital data demodulator, comprising:

a source of a modulated signal, having carrier pulses spaced relative to each other to represent a variable pulse width encoded digital data signal;

a detector for generating a variable pulse width encoded signal in response to received carrier pulses;

a decoder for decoding the variable pulse width encoded signal to generate the digital data signal.

9. (Original) The demodulator of claim 8 wherein the variable pulse width ~~code~~ encoded signal is a variable aperture code.

10. (Original) The demodulator of claim 8 wherein the carrier pulses have one of a first phase and a second phase.

11. (Original) The demodulator of claim 10 wherein the first phase is substantially 180 degrees out of phase with the second phase.

12. (Previously amended) A digital data demodulator.
comprising:

a source of a modulated signal, having carrier pulses spaced relative to each other to represent a variable pulse width encoded digital data signal;

a detector for generating a variable pulse width encoded signal in response to received carrier pulses;

a decoder for decoding the variable pulse width encoded signal to generate the digital data signal;

further comprising, coupled between the modulated signal source and the detector:

a bandpass filter;

an integrator; and

a limiting amplifier.

13. (Previously amended) A digital data demodulator,
comprising:

a source of a modulated signal, having carrier pulses spaced relative to each other to represent a variable pulse width encoded digital data signal;

a detector for generating a variable pulse width encoded signal in response to received carrier pulses;

a decoder for decoding the variable pulse width encoded signal to generate the digital data signal;

further comprising:

a windowing timer, coupled to the detector; for generating a windowing signal in the temporal neighborhood when a carrier pulse is expected; and wherein:

the detector is enabled by the windowing signal.

14. (Original) A digital data modulation method comprising the steps of:

providing a source of a digital data signal;

encoding the digital data using a variable pulse width code;

generating respective pulses representing edges of the encoded digital data signal; and

generating a carrier signal having carrier pulses corresponding to the respective pulses.

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15. (Original) A digital data demodulation method comprising the steps of:

providing a source of a modulated signal, having carrier pulses spaced relative to each other to represent a variable pulse width encoded digital data signal;

generating a variable pulse width encoded signal in response to received carrier pulses;

decoding the variable pulse width encoded signal to generate the digital data signal.